1/3/2007 GE 7FA 2x1 Plant Rev 3	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9	Case 10	Case 11	Case 12	Case 13	Case 14	Case 15	Case 16	Case 17	Case 18	Case 19	Case 20
Plant configuration	2x1	2x1	2x1	2x1	2x1	2x1	2x1	2x1	2x1	2x1	2x1	2x1	2x1	2x1	1x1	1x1	1x1	1x1	1x1	1x1
CTG Load Point	Base Load	Base Load	Base Load	Base Load	Base Load	Base Load	Base Load	Base Load	Base Load	Base Load	Base Load	Base Load	Base Load	Part Load	Base Load	Base Load	Base Load	Base Load	Part Load	Base Load
Ambient Temperature, °F	103.0	103.0	85.0	63.0	26.0	112.0	107.0	97.0	97.0	75.0	51.0	103.0	63.0	63.0	103.0	103.0	63.0	63.0	63.0	26.0
Relative Humidity, %	20.1	20.1	25.0	40.0	60.0	17.0	18.0	20.0	20.0	34.0	60.0	20.1	40.0	40.0	20.1	20.1	40.0	40.0	40.0	60.0
Ambient Pressure, psia	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52
Fogger Status	ON	ON	ON	ON	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
Steam Injection Status	OFF	ON	OFF	OFF	OFF	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Estimated Plant Performance

CT Generators terminal power, kW	316,600	344,200	327,800	340,200	362,000	339,400	342,400	348,800	321,200	332,400	341,400	282,800	329,800	165,400	158,300	141,400	170,100	164,900	82,700	181,000
ST Generator terminal power, kW	178,355	163,654	179,759	181,085	180,240	163,288	163,502	163,938	178,892	180,047	180,838	173,040	179,661	134,073	88,162	85,431	90,010	89,299	63,818	89,344
Condenser Pressure, in Hga	2.82	2.40	2.45	2.10	1.75	2.56	2.45	2.25	2.66	2.32	1.95	2.72	2.08	1.76	2.00	1.95	1.65	1.64	2.15	1.91
Gross Plant Power, kW	494,955	507,854	507,559	521,285	542,240	502,688	505,902	512,738	500,092	512,447	522,238	455,840	509,461	299,473	246,462	226,831	260,110	254,199	146,518	270,345
Total Fuel Input, MMBtu/hr (HHV)	3,352	3,504	3,436	3,533	3,704	3,470	3,491	3,540	3,386	3,472	3,540	3,090	3,446	2,251	1,676	1,545	1,766	1,723	1,126	1,852
Gross Plant Heat Rate, Btu/kWh (HHV)	6,772	6,900	6,770	6,777	6,831	6,903	6,901	6,903	6,772	6,775	6,778	6,778	6,765	7,518	6,800	6,810	6,791	6,779	7,683	6,850
Plant Auxiliary Loads, kW	12,586	12,785	12,698	12,819	12,672	12,741	12,770	12,834	12,634	12,739	12,661	12,071	12,546	10,451	8,167	7,909	8,089	7,952	6,604	7,773
Net Plant Power, kW	482,370	495,070	494,861	508,466	529,569	489,947	493,132	499,904	487,457	499,709	509,577	443,769	496,915	289,023	238,296	218,922	252,021	246,247	139,914	262,572
Net Plant Heat Rate, Btu/kWh (HHV)	6,948	7,078	6,944	6,948	6,994	7,083	7,080	7,080	6,947	6,948	6,946	6,962	6,936	7,790	7,033	7,056	7,009	6,998	8,046	7,053

STREAM

2	HP Steam Turbine Inlet																			
	Mass Flow, lb/hr	813,007	844,771	818,153	821,970	821,731	842,836	843,950	846,983	815,281	818,841	820,763	789,803	815,821	615,780	427,650	414,620	432,472	429,022	322,965	433,693
	Pressure, psia	1,719	1,777	1,730	1,737	1,723	1,774	1,776	1,780	1,724	1,731	1,735	1,672	1,725	1,313	925	898	936	928	702	934
	Temperature, °F	1,050	1,050	1,050	1,050	1,031	1,050	1,050	1,048	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,038
	Enthalpy, Btu/lb	1,514	1,512	1,513	1,513	1,502	1,512	1,512	1,511	1,513	1,513	1,513	1,515	1,513	1,525	1,536	1,537	1,535	1,536	1,542	1,529
9	IP Steam Turbine Inlet																			
	Mass Flow, lb/hr	966,378	812,492	969,363	972,941	980,121	812,852	812,463	812,280	966,364	969,688	971,480	938,709	966,305	728,349	500,068	484,932	505,686	501,571	373,708	508,893
	Pressure, psia	409	345	411	412	413	345	345	345	409	411	411	398	409	309	213	206	215	213	159	215
	Temperature, °F	1,050	1,050	1,050	1,050	1,034	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,038
	Enthalpy, Btu/lb	1,550	1,551	1,550	1,550	1,541	1,551	1,551	1,551	1,550	1,550	1,550	1,550	1,550	1,552	1,555	1,555	1,555	1,555	1,556	1,549
10	LP Steam Turbine Exhaust																			
	Mass Flow, lb/hr	1,087,794	935,317	1,096,754	1,104,415	1,121,556	934,088	934,641	936,664	1,091,579	1,098,616	1,103,112	1,050,891	1,093,846	793,654	539,393	521,772	546,313	541,801	400,009	553,021
	Pressure, psia	1.4	1.2	1.2	1.0	0.9	1.3	1.2	1.1	1.3	1.1	1.0	1.3	1.0	0.9	1.0	1.0	0.8	0.8	1.1	0.9
	Temperature, °F	113	107	108	103	97	110	108	105	111	106	100	112	102	97	101	100	95	95	104	100
	Enthalpy, Btu/lb	1,075	1,077	1,074	1,073	1,070	1,077	1,077	1,076	1,074	1,073	1,073	1,074	1,072	1,073	1,082	1,082	1,077	1,077	1,102	1,078
14	Preheater Inlet																			
	Mass Flow, lb/hr	606,096	672,086	619,849	625,657	638,168	668,851	671,017	675,073	616,495	621,696	625,372	590,887	618,767	501,610	646,359	628,358	646,217	642,885	504,940	660,374
	Pressure, psia	94	91	97	98	102	90	91	91	96	97	98	90	97	67	101	89	112	106	58	115
	Temperature, °F	125	125	121	117	112	126	125	123	124	120	115	124	117	135	127	127	118	119	135	124
	Enthalpy, Btu/lb	93	93	90	85	81	94	93	91	92	88	83	92	85	103	95	95	86	87	103	92
18	HRSG LP Superheater Outlet																			
	Mass Flow, lb/hr	56,637	57,189	59,589	61,626	66,611	56,393	56,866	57,957	58,527	60,371	61,730	52,141	59,692	29,571	35,048	32,700	36,303	35,934	23,070	39,784
	Pressure, psia	68	59	69	69	70	59	59	59	68	69	69	65	68	49	79	68	89	84	25	92
	Temperature, °F	622	629	622	622	619	629	629	629	622	622	622	620	622	599	587	582	589	587	550	588
	Enthalpy, Btu/lb	1,343	1,347	1,343	1,343	1,341	1,347	1,347	1,347	1,342	1,342	1,342	1,342	1,342	1,332	1,324	1,323	1,325	1,324	1,310	1,324
19	LP Steam Turbine Inlet																			
	Mass Flow, lb/hr	113,278	114,378	119,177	123,252	133,220	112,786	113,735	115,915	117,059	120,741	123,457	104,283	119,382	59,145	35,048	32,700	36,303	35,934	23,070	39,784
	Pressure, psia	66	57	66	67	68	57	57	57	66	67	67	64	66	48	78	67	89	83	24	91
	Temperature, °F	622	629	622	622	619	629	629	629	622	622	622	620	621	599	587	581	589	587	550	588
	Enthalpy, Btu/lb	1,343	1,347	1,343	1,343	1,341	1,347	1,347	1,347	1,342	1,342	1,342	1,342	1,342	1,332	1,324	1,323	1,325	1,324	1,310	1,324
50	Air to Fogger Inlet																			
	Mass Flow, lb/hr	3,321,955	3,318,335	3,416,164	3,520,862	3,710,754	3,273,412	3,301,498	3,356,398	3,359,341	3,456,294	3,543,355	3,133,229	3,459,401	2,323,613	3,321,955	3,133,229	3,520,862	3,459,401	2,323,613	3,710,754
	Temperature, °F	103	103	85	63	26	112	107	97	97	75	51	103	63	63	103	103	63	63	63	26
64	Stack Outlet																			
	Mass Flow, lb/hr	3,416,000	3,532,001	3,507,000	3,607,000	3,792,002	3,488,000	3,516,001	3,571,000	3,453,000	3,544,000	3,621,001	3,201,001	3,535,000	2,373,000	3,416,000	3,201,001	3,607,000	3,535,000	2,373,000	3,792,003
	Temperature, °F	193	187	191	190	190	188	188	187	192	191	189	187	188	180	189	183	190	188	180	197
65	Fuel Gas Heater Fuel Inlet																			
	Mass Flow, lb/hr	73,523	76,866	75,378	77,496	81,248	76,120	76,588	77,643	74,283	76,157	77,646	67,772	75,599	49,387	73,523	67,772	77,496	75,599	49,387	81,248
	Pressure, psia	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450
	Temperature, °F	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
69	Steam Injection to Unit 1																			
	Mass Flow, lb/hr	0	116,300	0	0	0	114,850	115,750	117,600	0	0	0	0	0	0	0	0	0	0	0	0
	Pressure, psia	459	350	460	462	463	350	350	350	459	460	462	445	459	346	303	293	307	304	226	308
	Temperature, °F	698	485	697	697	683	485	485	485	697	697	697	698	697	699	755	755	756	755	754	746
	Enthalpy, Btu/lb	1,359	1,242	1,358	1,358	1,351	1,242	1,242	1,242	1,358	1,358	1,358	1,360	1,358	1,366	1,398	1,398	1,398	1,398	1,401	1,393

Figure 3.3 - Heat and Material Balances for GE 7FA Plant Configuration